Phase (check one)	Type (check one)
☒ Site Investigation ☒ Emergency Corrective Actions ☐ Corrective Action Plan ☐ Corrective Action Summary Report ☐ Operations & Monitoring Report	☒ Work Scope ☐ Technical Report ☐ PCF Reimbursement Request ☐ General Correspondence

EMERGENCY CORRECTIVE ACTIONS
SITE INVESTIGATION

Springfield Humane Society
Springfield, VT 05156

SMS Site #to be assigned

A Facility Owned By:
c/o All Seasons Construction Corp.
P.O. Box 590
Springfield, VT 05156
(802) 885 - 5722
Contact: Ted Chivers

Prepared By:
Dufresne-Henry, Inc.
Precision Park
North Springfield, VT 05150
(802) 886-2261
Contact: F. David Deane, P.E.

August 13, 1998

Proposed Work Plan
Emergency Corrective Actions/Site Investigation

SPRINGFIELD HUMANE SOCIETY
SPRINGFIELD, VERMONT

INTRODUCTION

This work plan outlines the tasks to be completed for Emergency Corrective Actions and a Site Investigation at the Springfield Humane Society in Springfield, Vermont. This plan has been developed as a result of the discovery of a #2 heating oil release from a 275 gallon, exterior AST.

The release has resulted in vapors inside the managers residence. The vapors are currently being controlled to acceptable levels with the use of a fan. However, steps must be taken immediately so that vapors will not be a problem during cold weather. Emergency Corrective Actions are proposed consisting of the excavation of contaminated soil to the limits allowed by site conditions and the installation of an active vapor extraction system.

The purpose of the Site Investigation is to determine the existence and extent of subsurface petroleum contamination at the site. The proposed monitoring wells will be used to help ascertain the extent of a contamination plume and provide basic hydrogeologic data. At this time it is anticipated that approximately four (4) shallow groundwater monitoring wells will be installed. The exact well arrangement will be determined by the observations during the Emergency Corrective Actions.

The subcontractors to be used for this project are: Gurney Brothers Construction, Inc., All Seasons Construction Corp., M & W Soils Engineering, Inc., and Eastern Analytical, Inc. All field personnel involved with the soil excavation, vapor extraction system installation, and the site investigation are OSHA certified for hazardous site operations under 29 CFR part 1910.20.

EMERGENCY CORRECTIVE ACTIONS

1. Clean up basement - All Seasons

   It will be necessary to perform hand excavation of contaminated soil within the basement. The basement is currently full of many years of accumulated debris. Shelving over the work area will have to be disassembled, and the debris will need to be removed.

2. Construction of basement access - Gurney Brothers & All Seasons

   Access to the residence basement is via a narrow stairway through the kitchen. Any excavated material would have to be hauled out by hand up these stairs. To facilitate access to the basement for this, and any future remediation work, it is proposed that part of the

foundation wall on the north end of the building be removed, and a bulkhead be installed. The area outside of the house that will be excavated to accomplish this construction is at the former tank location. Excavation in this area would be required to remove contaminated soil anyway. The construction of the bulkhead will be a permanent improvement. It is suggested that the PCF pick up from ½ to 2/3 of the cost of the bulkhead construction. It will also be necessary to build an access for a concrete truck to pour the bulkhead and adjacent foundation. This access area will be leveled off to provide a potential storage area for the on-site polyencapsulation of contaminated soil.

3. Excavation of contaminated soil - Gurney Brothers with monitoring by DH.

Contaminated soil outside of the building at the former tank location will be excavated to the extent possible. Removal of part of the chain link dog kennel will be required. The area/volume that can be excavated will be controlled by one or more of several factors: the depth of contaminated soil (the limit may be reached but this seems unlikely); the depth to bedrock; the stability of the foundation. The same factors will control hand excavation of contaminated soil inside of the building. Overall, it is not expected that more than 25 to 30 cubic yards of soil will be excavated.

4. Installation of soil vapor extraction system - Gurney Bros.

In the likely case that all contaminated soil outside and/or inside the house can not be removed, a soil vapor extraction system will be installed. The system will consist of 4" corrugated polyethylene pipe. A 3" to 4" bed of washed ½" gravel will be placed in the bottom of the excavated areas, and perforated sections of pipe placed on top of the gravel. The pipe will be covered with more stone to about 2" above the crown, and a layer of 6 mil polyethylene sheeting laid on top of the stone. Several more inches of stone will be placed on top of the poly inside the basement, and common fill will be placed on the poly outside of the basement. It is anticipated that there will be two to three legs of perforated pipe inside, and one or two legs outside. The perforated sections will be connected to solid wall sections with standard connectors for this type of pipe, and the connectors sealed tight with duct tape. The legs will be connected to a common header which will lead to a 1.5 horsepower blower to be located near the existing water pump in the basement. The blower will discharge through a 2" solid wall PVC pipe to a 55 gallon vapor phase carbon treatment drum located outside. A switch will be provided so that the system can be turned off during the evening hours to minimize noise problems to the resident. Dufresne-Henry will periodically screen influent and effluent vapor concentrations with a PID.

5. Stockpile soils - Gurney Brothers and DH.

Excavated contaminated soil will be polyencapsulated on site at the northwest corner of the property. We may request permission for offsite disposal.

6. Locate and test the existing water well - DH.

Based on the location of lines running from the pump, the water well is apparently located in front of (west) of the house. It is likely within 30' of the former tank location. A magnetic locator will be used to identify the well location. A water sample will be obtained from the kitchen tap and analyzed for BTEX and TPH.

SITE INVESTIGATION

It is anticipated that the majority of the Site Investigation will be conducted after the Emergency Corrective Actions are complete. This is necessary to avoid worker and equipment conflicts in a limited space, avoid potential damage to monitoring wells, and will likely yield useful information on site soils, depth to bedrock, and possibly depth to water. Once soil removal activities are completed, and the vapor extraction system operational, three or four monitoring wells will be installed and sampled, and a formal Site Investigation report prepared in accordance with SMS guidelines.

1. Borings

It is anticipated that the borings for the monitoring wells will be completed using 4 1/4" hollow stem augers. If possible, monitoring well borings will be taken a minimum of five (5) feet into the prevailing water table. It is anticipated that well depth will not exceed 20 feet. Petroleum based pipe dope for use on drill rods, tools, or casing will not be allowed. No type of drilling mud, including polymers, will be used. Should flowing sands be encountered, clean water obtained locally will be used to increase hydraulic head. If flowing sands are particularly problematic, casing will be used. All borings and monitoring well installations will be performed by M & W Soils Engineering, Inc. of Charlestown, New Hampshire under the field observation of Dufresne-Henry personnel.

2. Soil Sampling

Soil samples will typically be taken at a minimum of 5 foot intervals using a split spoon sampler. Sampling at other intervals may occur and will be a field decision of the Dufresne-Henry inspector. Possible reasons include abrupt changes in drill rate and suspected zones of contamination. It is likely that continuous sampling will be done in the boring at, or immediately downgradient of the former UST. The split spoon sampler allows retrieval of relatively undisturbed soil samples from a known depth for classification and Volatile Organic Compound (VOC) screening. All soil samples and material from the auger flights will be screened for VOC's by headspace analysis with a Photovac HL-2000 photoionization detector (10.6 eV lamp, calibrated with Isobutylene). The act of driving the sampler (Standard Penetration Test) also gives an indication of the density or degree of compaction of the soil. Representative samples from each spoon will be placed in glass jars and retained by Dufresne-Henry. These are for project records only and are not intended for chemical analysis. Detailed logs of geology, drilling data, PID readings, and monitoring well installation will be

prepared for each boring. At this time it is not anticipated that analytical soil samples will be collected.

3. Monitoring Wells

Monitoring wells will be constructed from 2", 0.010" machine slotted, threaded, flush joint, Schedule 40 PVC. Assuming no refusal, each monitoring well will consist of 10' to 15' of screen with sufficient riser to reach approximately 2" below the surface grade. The bottom of the well will be set such that approximately 5 feet of screen extends below the water table observed at the time of installation. For wells with shallow depth to the water table, the screened interval will be a decision of the Dufresne-Henry inspector. The bottom of all wells will be provided with a PVC cap or point, or a plug with an expanding gasket. The annular space between the auger and the screen will be carefully backfilled with clean silica sand to create a filter pack around the well. The filter pack will extend from the bottom of the well to approximately 2 feet above the screen. A bentonite seal will be installed above the filter pack, and the remainder of the hole will be backfilled with native soil. A protective monitoring well box will be grouted in flush at the surface or a stick-up steel casing installed depending on the location. All wells will have removable top caps for sampling and sounding.

4. Decontamination

The borings may, or may not, be completed within the zone of contamination. However, to prevent cross contamination between the borings, strict decontamination procedures will be followed. All in-ground tools and equipment will be decontaminated by steam cleaning prior to the start of work. All decontamination will be done on-site at a designated location. Within the known contaminated area, routine cleaning of equipment, such as split spoons, will use water obtained at the site and a product such as ALCONOX. Disposal of spent cleaning solution will be at the site. Excess contaminated soil will be stored on-site in the polyencapsulated stockpile from the Emergency Corrective Actions.

5. Water Sampling

Water quality samples will be obtained from the Dufresne-Henry installed monitoring wells following a period of stabilization. The samples will be taken by Dufresne-Henry personnel. Samples will be obtained with disposable bailers which will be left in the wells to facilitate future sampling. Samples may not be obtained from any well exhibiting free product. All of the monitoring wells will be analyzed for VOC's by EPA Method 602(mod) and for TPH by EPA Method 8100(mod) by Eastern Analytical, Inc. of Concord, New Hampshire.

6. Site Survey

The relative locations and elevations of the monitoring wells will be determined. Sufficient additional surveying will be performed to update any existing site plan or prepare a new site plan.

7. Receptor Assessment

A receptor assessment will be conducted to identify potential receptors including nearby water supply wells and surface water. The basements of any nearby buildings, if any, will be screened with the PID as deemed necessary. An already identified well approximately .2 miles from the site will be tested if necessary.

8. Reporting

A report will be prepared summarizing the Emergency Corrective Actions, and the findings and recommendations of the Site Investigation including the monitoring well installation, groundwater quality and overall characterization of shallow subsurface conditions, and the likely impacts on potential receptors. Conclusions and recommendations regarding the need for long term treatment and/or monitoring will be included. The report will be submitted within 30 days of the monitoring well installation.

A summary breakdown of estimated costs to conduct the Emergency Corrective Actions and the Site Investigation will be found attached.

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EMERGENCY CORRECTIVE ACTIONS
SPRINGFIELD HUMANE SOCIETY
SPRINGFIELD, VERMONT

ESTIMATED COSTS

Gurney Brothers Construction	$11,800
See attached breakdown and documentation	
All Seasons Construction	$4,489
See attached breakdown and documentation	
Dufresne-Henry Observation/Monitoring/Reporting	$1,500

GURNEY BROTHERS
Construction, Inc.

NORTH SPRINGFIELD, VT. 05150
Tel. 802/886-2210

August 11, 1998

Dufresne - Henry Inc.
Precision Park
N. Springfield, VT 05150

Atten: David Deane

Re: Springfield Humane Society, clean-up contaminated area associated around and inside basement area of the house.

Mr. Deane,

We are pleased to give you an estimated price of $ 11,800.00 to perform the work that we talked about on our site meeting on August 6, 1998.

Scope of Work -

- Install an access drive into site for heavy equipment entry.
- Dismantle the fencing associated with area to be disturbed.
- Excavate below and around old area of the above ground tank, encompassing an estimated area of 8' x 12' x 6' deep.
- Dismantle and remove a portion of the stone foundation to gain entry into the basement area.
- Excavate area inside basement corner based on the same estimated quantity used on the outside.
- All excavated material that is above permissible levels will be stockpiled on-site encapsulated in 6 mil poly.
- Place an encapsulated layer using poly with cr.stone a perf flex pipe to be connected to blower system.
- Backfill around bulkhead wall by others.
- Re-install fencing and peastone in dog runs as they fit in after the construction.
- Clean up access roadway, seeding and mulching disturbed areas.

I am including an estimate from All Seasons Cont. Corp. For work they will be performing. The option of not gaining entry through the foundation wall, but instead removing the contaminated material inside by hand only would add about $ 8,250.00 to my price. Based on All Seasons price which also includes the cleaning of the basement area prior to our starting seems to be the best option.

If you have any questions, or I can be of further assistance, please let me know.

Sincerely,

Daniel A. Gurney

Daniel A. Gurney

* Also enclosed is our rate sheet for equipment and personal.

GURNEY BROS RATES

EXCAVATORS & BACKHOES			
CAT 325	hr	$	140.00
CASE 1280	hr	$	125.00
CASE 1085-B	hr	$	110.00
CASE 1085-B Ho-Ram	hr	$	175.00
CAT EL-70	hr	$	82.00
JOHN DEERE JD-290	hr	$	90.00
CAT 426	hr	$	60.00
CAT 436	hr	$	80.00
TRACKED EQUIPMENT			
CAT 963	hr	$	125.00
CAT 955-K	hr	$	90.00
CAT D-6H	hr	$	110.00
CAT D-3	hr	$	68.00
LOADERS			
CAT 920	hr	$	68.00
CAT 930	hr	$	75.00
CAT 936	hr	$	95.00
CAT 950	hr	$	96.00
CAT 950E	hr	$	100.00
GRADER & ROLLERS			
CAT 120	hr	$	85.00
CAT CB214	hr	$	53.00
CAT CS433B	hr	$	80.00
TRUCKS			
Truck 7 C.Y.	hr	$	38.00
Truck 14 C.Y.	hr	$	48.00
Tractor Trailer	hr	$	68.00
Tag Along with Truck	hr	$	50.00
Asplundh Chipper	hr	$	50.00
CASE 1840 Skidster	hr	$	50.00
Elgin Street Sweeper	hr	$	90.00
Atlas Compressor w/ Tools + Man	hr	$	80.00
Ditch Witch	hr	$	42.00
Mulcher w/ Pickup + Man	hr	$	80.00
Cut-off Saw w/o Operator (diamond)	hr	$	90.00
Cut-off Saw w/ Operator (diamond)	hr	$	115.00
Compactor - Wacker Rammer - Sled	hr	$	18.00
Rammax	hr	$	48.00
Farm Tractor	hr	$	45.00
w/ Pump	hr	P.O.R.	
w/ Stone Picker	hr	$	80.00
w/ Stone Rake	hr	$	80.00
w/ Brillion	hr	$	55.00
w/ York Rack	hr	$	50.00
Pump 6"	hr	$	50.00
Pump 3"	hr	$	15.00
3" Electric Pump	day	$	50.00
4" Electric Pump	day	$	55.00
Welder with Operater	hr	$	40.00

GURNEY BROS RATES

Gas Monitor Instrument	day	$	95.00
Vacum-Test	test	$	65.00
Manhole Tripod Retrieval System	day	$	75.00
Manhole Forced Air Blower	day	$	45.00
Trench Box	wk	$	600.00
Labor	hr	$	32.00
Gradesman	hr	$	40.00
Supervisor	hr	$	50.00
WINTER RATES			
Loader	hr	$	104.00
Backhoe	hr	$	81.00
Grader	hr	$	79.00
Snow Blower	hr	$	104.00
1085 Excavator	hr	$	110.00
7 C.Y. w/ Plow & Wing	hr	$	79.00
7 C.Y. w/ Sander	hr	$	63.00
7 C.Y. Snow Removal	hr	$	40.00
14 C.Y. Snow Removal	hr	$	48.00
Walk Behind Snow Blower	hr	$	40.00
Labor Snow Removal	hr	$	30.00
Water Thawing w/ Welder ($75.00 first hour)	hr	$	60.00
Water Thawing w/ Steam Jenny ($125.00 min)	hr	$	75.00
Water Thawing w/ Thaw Tube	hr	$	60.00
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ALL◇SEASONS
CONSTRUCTION CORP.
P.O. BOX 590, SPRINGFIELD, VERMONT 05156
TEL (802) 885-5722 FAX (802) 885-2313

August 11, 1998

Gurney Brothers Construction, Inc.
Gurney Road
No. Springfield, Vermont 05150

Attention: Dan Gurney

Reference: Humane Society
Clean Out Basement and Construct Bulkhead

Gentlemen:

We hereby submit the following quotation in the amount of $4,489. to complete the work on the above referenced project in conformance with our on-site review and per the following scope of work.

Clean out miscellaneous rubbish and materials from north end of basement,
Cut and patch brick and stone at foundation opening as required,
Form and pour concrete footings, walls and slab at area way for bulkhead,
Furnish and install steel bulkhead door,
Provide metal stair stringers with 2x10 treads,
Frame in opening at foundation and install insulated door.

Our hourly rates for laborers and carpenters will vary from $22. to $27. per hour.

If you have any questions regarding this proposal, please do not hesitate to call.

Very truly yours,
ALL SEASONS CONSTRUCTION CORP.

Edward (Ted) Chivers
President

jl

SITE INVESTIGATION
SPRINGFIELD HUMANE SOCIETY
SPRINGFIELD, VERMONT

ESTIMATED COSTS

Work Plan, Health and Safety Plan	
DH labor and expenses	$500
Monitoring Wells (4 @ 20'/ea)	
DH labor and expenses	$1,400
Boring subcontractor labor/materials	$2,200
Site Survey and Receptor Study	
DH labor and expenses	$400
Water Quality Analysis	
DH labor and expenses	$250
Contract Analytical Laboratory	
4 EPA 602(mod) & 4 EPA 8100(mod)	$550
Report	
DH labor and expenses	$1,500